

REMARKS/ARGUMENTS

Claims 1-18 and 21-22 are active.

Claim 1 is amended to clarify the positional relationship of the rigid substrates such relationship being also defined by the positioning of solar protective layer on the outer surface of the first rigid substrate.

Support for these amendments is found in the specification at page 4, line 34 to page 12, which describes the positional relationship of the substrates and their faces; FIG. 2, 3, 5 and 6; and page 15, line 30 to page 18.

In the Action, the Examiner has maintained the rejections citing primarily the inventors earlier application, i.e., Giron W2002/006889 (U.S. 2004/0053125) by itself or in view of Johnson.

As explained in Applicants prior reply, as apparent from the claims, and emphasized again during the above-noted discussion, the claims of this application are directed to glazings (e.g., made of glass) that incorporate a polymer film that functions to contain fragments if broken (see the Background portion of the application at pages 1-2). In addition, functional or active system layers were known to be provided in glazing arrangements. In particular, it is true that the Giron publication (note that the U.S. PGPUB cited is now U.S. patent no. 7,230,748) describes such electrochromic active systems in glazing arrangements with polymer protective layers. While Applicants recognize the citations in paragraphs [0022], [0024], [0025], [0079], and [0080] of the prior Giron application are relevant to the claims here, Giron does not actually describe what is claimed (in the original claims examined nor that which is presented here).

That is, contrary to the conclusion in the rejection the Giron application does not describe the arrangement that is defined in the claims, i.e., the active system on to the inner

face (2) of substrate (S1) and then with the protective polymer layer (f1). It would appear that the misunderstanding arose based on a misinterpretation of the claims (see rejection under 35 USC 112, second paragraph and the inclusion of “succession” in the claims). The arrangement where the active system on to the inner face (2) of substrate (S1) and then with the protective polymer layer (f1) is not described by Giron.

Notwithstanding these points, the Examiner has maintained that contrary to Applicants explanation, the Examiner believes that Giron describes such an arrangement, specifically in paragraph [0080] of the U.S. publication (see page 8 of the Official Action).

Paragraph [0080] of Giron is:

[0080] All the figures show a glass pane 1, provided with a lower conductive layer 2, an active stack 3, surmounted by an upper conductive layer, a network of conductive wires 4 above the upper conductive layer and embedded in the surface of an ethylene vinyl acetate EVA (or polyurethane) film which is not shown for increased clarity. The glazing also comprises a second glass pane, not shown for further clarity, above the EVA film 5. The two glass panes and the EVA film are secured by a known lamination or calendering technique, by heating, possibly under pressure.

In the above-noted meeting, this teaching in Giron was particularly discussed. As it was explained to the undersigned, in the Examiner’s view, the “active system” in the claims is the same as the lower conductive layer, active stack and upper conductive layer because that active system is provided in the glass pane 1 (a rigid substrate), the Examiner views this as placing the active system on the inner face of the glass pane. The placement of the EVA film on the active system but below the second rigid substrate is viewed by the language “embedded in the surface. . .” in paragraph [0080].

However, contrary to this position, the Examiner’s position is not shown in the Figures as asserted in the rejection.

Paragraph [0021] of the U.S. patent PUB to Giron states (emphasis added):

In the sense of the invention, the term "lower" electrode refers to the electrode which is closest to the carrier substrate taken as a reference, on which at least part of the active layers (all the active layers in an "all-solid" electrochromic system) is arranged. The "upper" electrode is the one placed on the other side, with respect to the same reference substrate.

Paragraph [0022] of the U.S. patent PUB of Giron states (emphasis added):

The invention is applicable to glazing in the broadest sense: the carrier substrate is generally rigid and transparent, of the glass or polymer type such as polycarbonate or polymethylmethacrylate (PPMA). However, the invention includes polymer-based substrates which are flexible or semiflexible.

Paragraph [0023] of the U.S. patent PUB of Giron states (emphasis added):

Generally, the electrodes are transparent. However, one of them may be opaque if the glazing operates not in transmission but in reflection (mirror). [0024] The active system and the upper electrode are generally protected by another substrate of the rigid type, possibly a laminate including one or more thermoplastic polymer films of the EVA (ethylene vinyl acetate), PVB (polyvinyl butyral) or PU (polyurethane) type

Thus, it is clear that the electrochromic stack or system is deposited on the carrier substrate, which is laminated together with a thermoplastic polymer film and a second substrate (called a protective substrate). Finally, one can deduce of this assembly, that the electrochromic system is deposited in face 3 of the substrate (2), this substrate (2) being the carrier substrate, and the protective substrate being the substrate (1). In this configuration, if the substrate (1) is broken, the thermoplastic polymer is not able to keep together the electrochromic stack and the carrier substrate (2), this substrate (2) with the stack can fall down in the user.

The specification discusses this configuration as prior art (see pages 5 and 6):

In general, the active system is incorporated on face 3 of the substrate assembly before the lamination operation and after the bending and/or toughening operation (when, of course, the substrates have to undergo a bending and/or toughening operation).

However, the incorporation of an active system on face 3 of a laminated substrate, the substrates of which have individually undergone a bending operation, generates other drawbacks that the present invention aims to remedy.

This is because incorporation of the active system on face 3 of the assembly is in fact carried out on that face of the second substrate which has been in contact with the members that have caused the bending. As a consequence of this contact between the members needed for the bending operation and that face of the substrate in question, surface defects are inevitably created on the face of the substrate in question.

These surface defects may result in delamination problems at the interface between the active system and face 3 of the substrate, this delamination possibly resulting in irreversible deterioration of the complete glazing assembly”

The present invention therefore aims to alleviate these drawbacks by proposing a glazing assembly containing an active system of simplified structure.

In the claimed invention, the configuration is totally different. The electrochromic stack is deposited on the face 2 of the substrate (1) (the protective substrate). Whereas the carrier substrate (2) and the substrate (1) with the stack are laminated together with the thermoplastic interlayer.

Further, that the active system is specifically placed on face 2 (inner face) of the first substrate, the problems (delamination, defects on the face, see page 6, 1st ¶ of the earlier methods were resolved (see page 6, lines 23-24 of the specification). The comment from the Advisory Action that the substrates were not defined in the positional way, such is no longer applicable in light of the amendments submitted. Again, reference to the Figures and the discussion found on page 5 of the application shows how the substrates are arranged in relation to each other and the active system.

To the obviousness rejection citing Giron combined with U.S. 6,284,360 to Johnson et al. Johnson is cited to allege that the features of claims 12-14 were known and thus when

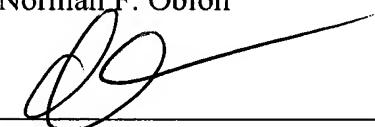
combined with the Giron assembly renders those claims obvious. However, as explained above, the arrangement where the active system on to the inner face (2) of substrate (S1) and then with the protective polymer layer (f1) is not described by Giron. Johnson neither describes nor suggests the arrangement defined by the claims. As a result, the combination of Giron and Johnson does not teach or suggest of the limitations of the claims.

Withdrawal of the rejection is requested.

A Notice of Allowance is also requested.

Respectfully submitted,

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